# A BRIEF
# ON
# THE PROPOSED REGULATION OF MIDWIVES UNDER THE HEALTH DISCIPLINES ACT

Prepared for:

Health Disciplines Board

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September , 1990

91-00329/

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## 1. PURPOSE OF PAPER

In 1989 the Alberta Association of Midwives applied for designation under the Health Disciplines Act. The Honourable Dick Fowler, Minister Responsible for Professions and Occupations, requested that the Health Disciplines Board investigate the need for regulating midwives under the Act. As a component of this investigation, the Board issued an open invitation to the public, government departments and stakeholder organizations to submit briefs and presentations. This paper outlines the service trends and issues leading to Alberta Health's recommendations concerning the designation of midwives under the Health Disciplines Act.

## 2. BACKGROUND

### 2.1 Previous Application for Regulating Midwives in Alberta

In 1982, the Domiciliary Midwives Association applied to the Health Disciplines Board for designation under the Health Disciplines Act. During its investigation, the Board identified the following key factors:

1. Safety - it is too risky to have birth at home, the hospital and its technology are necessary in the event of an emergency.

2. Professional Unity - as domiciliary midwifery is a sub-discipline of midwifery, it should not be regulated separately.

3. Backup - at present there is no provision for medical backup at homebirths.

Based on these findings, the Board concluded that the discipline of domiciliary midwifery was a subset of the larger discipline of midwifery and that it was not in the public interest to partition the discipline. The Board, therefore, recommended that the discipline of domiciliary midwifery not be designated under the Health Disciplines Act. The Board also noted that its recommendation should not be seen to prejudice an investigation of the discipline of midwifery if a future application is received.

### 2.2 Alberta Association of Midwives

In 1984, when the investigation into the designation of domiciliary midwives was completed by the Heath Disciplines Board, midwives were represented by two provincial associations, the Association of Nurse Midwives and the Domiciliary Midwives Association. In 1986, the two associations merged to form the Alberta Association of Midwives, which is now applying for designation under the Health Disciplines Act.

The Association currently has a membership of 73 with 67 nurse-midwives and 6 direct-entry midwives. The Association

estimates that midwives assist in about 200 home births annually in the province, although midwives are not regulated in Alberta.

The Association supports the role of midwives, as defined by the World Health Association, (see Section 2.3). A midwife is a "specialist" for normal childbirth and may practice in settings including; hospitals, alternative birthing centres, community centres and homes. To provide effective care, midwives must be an integral member of the health care team. The Association supports midwives working on a collegial basis with physicians and registered nurses.

2.3 Proposed Definition of Midwifery Practice

The World Health Organization, the International Confederation of Midwives and the International Federation of Obstetricians and Gynecologists and the Alberta Association of Midwives have endorsed the following definition:

> A midwife is a person who, having been regularly admitted to a midwifery educational programme, duly recognized in the country in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery.
>
> She must be able to give the necessary supervision, care and advice to women during pregnancy, labour, and the post-partum period, to conduct deliveries on her own responsibility and to care for the newborn infant. This care includes preventative measures, the detection of abnormal conditions in mother and child, the procurement of medical assistance and the execution of emergency measures in the absence of medical help.
>
> She has an important task in health counselling and education not only for patients but also within the family and community. The work should involve antenatal education and preparation for parenthood and extends to certain areas of gynaecology, family planning and child care.

The Alberta Perinatal Program Advisory Committee supports the functions of midwives, listed in Table 1, with the addition of the following functions:

- to teach nurses, medical students and trainee midwives; and
- to be competent in newborn resuscitation and assessment.

The Alberta Association of Registered Nurses (A.A.R.N.) supports nurse-midwifery as a valid area of nursing practice. A nurse-midwife would be a nurse registered under the Nursing Profession Act, who has completed a recognized educational program in nurse-midwifery. The A.A.R.N.

**TABLE 1**

**PROPOSED FUNCTIONS OF A MIDWIFE**

1. carrying out examinations necessary to establish and monitor normal pregnancies;
2. advising on and securing the examination necessary for the earliest possible diagnosis of pregnancies at risk;
3. providing education and preparation for childbirth, including advice on exercise and nutrition;
4. caring for and assisting the mother during labour and monitoring the condition of the foetus by the appropriate clinical and technical means;
5. conducting spontaneous vaginal deliveries;
6. recognizing the warning signs of abnormality in the mother or infant that necessitate referral to a physician;
7. taking necessary emergency measures in the absence of a physician;
8. examining and caring for the newborn infant;
9. caring for the mother in the postpartum period and advising her on infant care and family planning.

Source: Report of the Task Force on the Implementation of Midwifery in Ontario, 1987, pg. 86.

recommends that a nurse-midwife provides family-centered care to the mother, newborn, infant, and family during the reproductive cycle, with a focus on health and wellness. Nurse-midwifery care should include the management of uncomplicated pregnancies, conduct of normal deliveries on her own responsibility, care of the newborn and infant, execution of emergency measures in the absence of medical help, and procurement of medical assistance as required.

In summary, the midwife is recognized as a practitioner specializing in "normal" reproductive care; her primary client group includes women with healthy, low risk pregnancies, who are expected to have uncomplicated deliveries. Midwives could also counsel and teach women with higher risk pregnancies, whose care must be managed by physicians. The midwifery pilot project proposed by the Foothills Hospital in 1990 plans to use an antepartum scoring system (Appendix A) to identify low risk pregnancies.

2.4 Current Legal Status of Midwifery Practice

The Alberta Advisory Council on Women's Issues released a discussion paper in 1988 which identified three basic models of midwifery regulation:

Direct-Entry Midwife: Defined as an educationally prepared and licensed professional who practices midwifery in a home or hospital setting. In some countries (e.g., Great Britain, Sweden,Netherlands) midwifery is recognized as a formal component of the total health care system. This is the model supported by the Alberta Association of Midwifery and the Ontario Task Force on the Implementation of Midwifery.

Lay-Midwife: Defined as an unlicensed individual who has not completed a recognized training program and practices in a home setting.

Nurse-Midwife: Defined as a registered nurse who has received additional midwifery training and practices in a hospital setting. This model is supported by the Alberta Association of Registered Nurses, the Alberta Perinatal Program Advisory Committee and the Alberta Medical Association.

Currently, midwives are not recognized as a distinct health discipline in Alberta. The definition of exclusive nursing practice under the Nursing Profession Act includes "assisting in childbirth". As a result, registered nurses may provide some services that would fall under the definition of midwifery practice. In addition Subsection 76(5) of the Medical Profession Act establishes some requirements for the practice of midwifery in Alberta.

In Alberta a physician's preplanned attendance at a home birth is considered unbecoming conduct and could lead to loss of license. A contributing factor may be that the practice of midwifery is not legislated in the Province. The Alberta Association of Registered Nurses has taken the position that they cannot support home births within the current health care system, and instead promote birthing centres.

At the national level, the Canadian Confederation of Midwives, the coordinating body for nine provincial associations, is encouraging the development of professional legislation and the portability of credentials across provincial jurisdictions. In Ontario, midwifery legislation is expected to be tabled this year. Quebec has introduced legislation to permit pilot projects for midwifery practice to be established. As a result of a Supreme Court decision recommending that standards be established for midwifery practice to protect clients, British Columbia is investigating the feasibility of legislation.

In the United States, fifteen states recognize direct-entry midwives, while the remaining states recognize only nurse midwives. The shortage of obstetrical services in New York lead the State to support a study by the Carnegie Foundation to investigate the necessary educational requirements for direct entry midwives.

## 3. SERVICE TRENDS IN ALBERTA

### 3.1 Birth Rates

In 1988, Alberta's population included 743,336 females of child-bearing age (i.e., 10 to 49 years of age). The Edmonton Health Unit had 181,314 (24%) females of child-bearing age and the Calgary Health Unit had 209,830 (28%)). A demographic profile of live births are found in Table 2.

The number of live births for the 1988 calendar year was 41,114. In 1988, 10,474 (25%) live births occurred in the Edmonton Health Unit District and 11,488 (28%) in the Calgary Health Unit District.

Single mothers accounted for 7,078 live births in 1988 or about 17% of live births in Alberta. During the same period, teenage mothers (i.e., 15-19 years of age) accounted for 2,855 live births or 7% of provincial live births.

### 3.2 Still Births and Perinatal Mortality

Stillbirths are the number of deaths from 20 week gestation to birth. Perinatal mortality includes deaths from 20 weeks of gestation to 7 days after birth.

**TABLE 2**
**DEMOGRAPHIC PROFILE OF BIRTHS IN ALBERTA**
**FOR THE CALENDAR YEAR 1988**

1. Age Distribution of Alberta Females of Child-Bearing Age

| Age Group | Number | Percent of Total |
|---|---|---|
| 10 - 19 | 172,855 | 23.3 |
| 20 - 29 | 225,334 | 30.3 |
| 30 - 39 | 210,103 | 28.2 |
| 40 - 49 | 135,044 | 18.2 |
| TOTAL | 743,336 | |

2. Age-Specific Live Birth Rates for 1,000 Females

| Age Group | Number of Live Births | Live Birth Rate Per 1,000 Females |
|---|---|---|
| 10 - 14 | 28 | 0.3 |
| 15 - 19 | 2,855 | 32.4 |
| 20 - 24 | 9,542 | 93.0 |
| 25 - 29 | 15,841 | 129.0 |
| 30 - 34 | 9,909 | 85.3 |
| 35 - 39 | 2,595 | 27.6 |
| 40 - 44 | 336 | 4.4 |
| 45 - 49 | 8 | 0.1 |
| TOTAL | 41,114 | |

3. Location of Live Births

| Location | Number of Live Births | Percentage of Total |
|---|---|---|
| Edmonton Health Units | 10,474 | 25% |
| Calgary Health Units | 11,488 | 28% |
| Other Alberta Communities | 19,152 | 47% |
| TOTAL | 41,114 | |

4. Number of Live Children Born to Mothers (Including Birth in 1988)

| | Number of Mothers | Percent of Total |
|---|---|---|
| First Live Birth | 16,431 | 40% |
| Second Live Birth | 14,403 | 35% |
| Third or Higher Order Birth | 10,280 | 25% |

5. Marital Status of Mother

| | Number of Live Births | Percent of Total |
|---|---|---|
| Single | 7,078 | 17% |
| Married, Divorced, other | 34,036 | 83% |

Source: Alberta Vital Statistics and Health Economics and Statistics, Alberta Health

In 1988, Alberta reported 294 stillbirths and 445 perinatal deaths. The ratio of stillbirths to 1,000 live births was 7.2. The ratio of perinatal deaths to 1,000 total births was 10.8

According to data compiled by Statistics Canada, the national perinatal death rate was 8.7 in 1985. As indicated in Figure 1, Alberta and Quebec reported the lowest perinatal death rates nationally.

Data compiled by the Alberta Perinatal Program Advisory Committee in Figure 2, depicts the range in Alberta perinatal death rates by region over the period 1983 to 1986.

3.3 Home Birth Trends

As indicated in Tables 3 and 4, the number of home births, both planned and unplanned, registered with Alberta Vital Statistics ranged from 177 in 1985 to 202 in 1989. Home births accounted for 0.4% of Alberta live births in 1988. The number of stillbirths ranged from 1 out of 177 home births in 1985 to 4 out of 202 home births in 1989. Perinatal mortality rates were not available for home births.

Between 1985 and 1989, the number of home births increased the most for mothers in the age group 30 - 39 years. Over this period, Edmonton accounted for 45-50% of homebirths, while Calgary only accounted for about 20%. The proportion of provincial home births was highest for mothers who had perviously given birth. About 20% of home births were first live births.

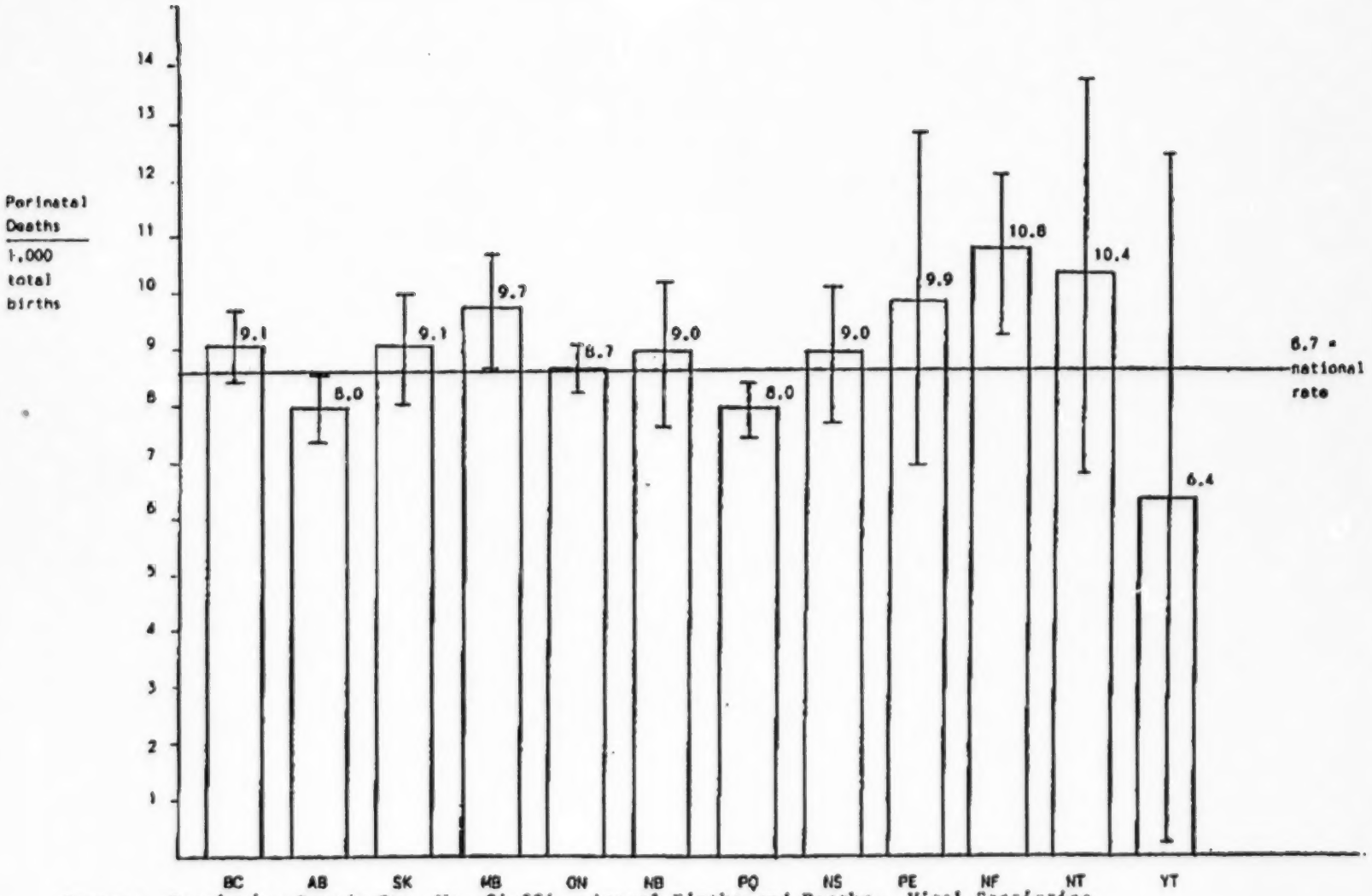
Comparing demographic data for all births in the province in 1988 (Table 2) to data for home births in the same year (Table 4) leads to the following observations:

- Although Edmonton and Calgary reported similar proportions of provincial live births (i.e., 25% and 28% respectively), Edmonton accounted for a higher proportion of home births (i.e., 41%) than Calgary (i.e., 20%);

- Women 20 to 29 years of age accounted for 25,383 live births or 62% of the provincial total in 1988. In the same year, women of this age group accounted for 46% of provincial home births. In contrast women 30 to 39 years of age reported 12,504 live births in 1988 or 30% of the provincial total and accounted for 50% of home births; and

- Province wide, first live births to a mother constituted 40% of the Alberta total live births in 1988. In contrast, first live births delivered in the home accounted for about 20% of all home births in 1988.

PERINATAL DEATH RATE BY PROVINCE OF BIRTH 1985 FIGURE I




Source: Statistics Canada Cat. No. 84-204. Annual Births and Deaths. Vital Statistics. Vol. I, 1985.

Perinatal Deaths = livebirths and stillbirths $\geq$ 20 weeks + death (1-7 days)

| indicates two standard deviations above and below the rate

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FIGURE #2

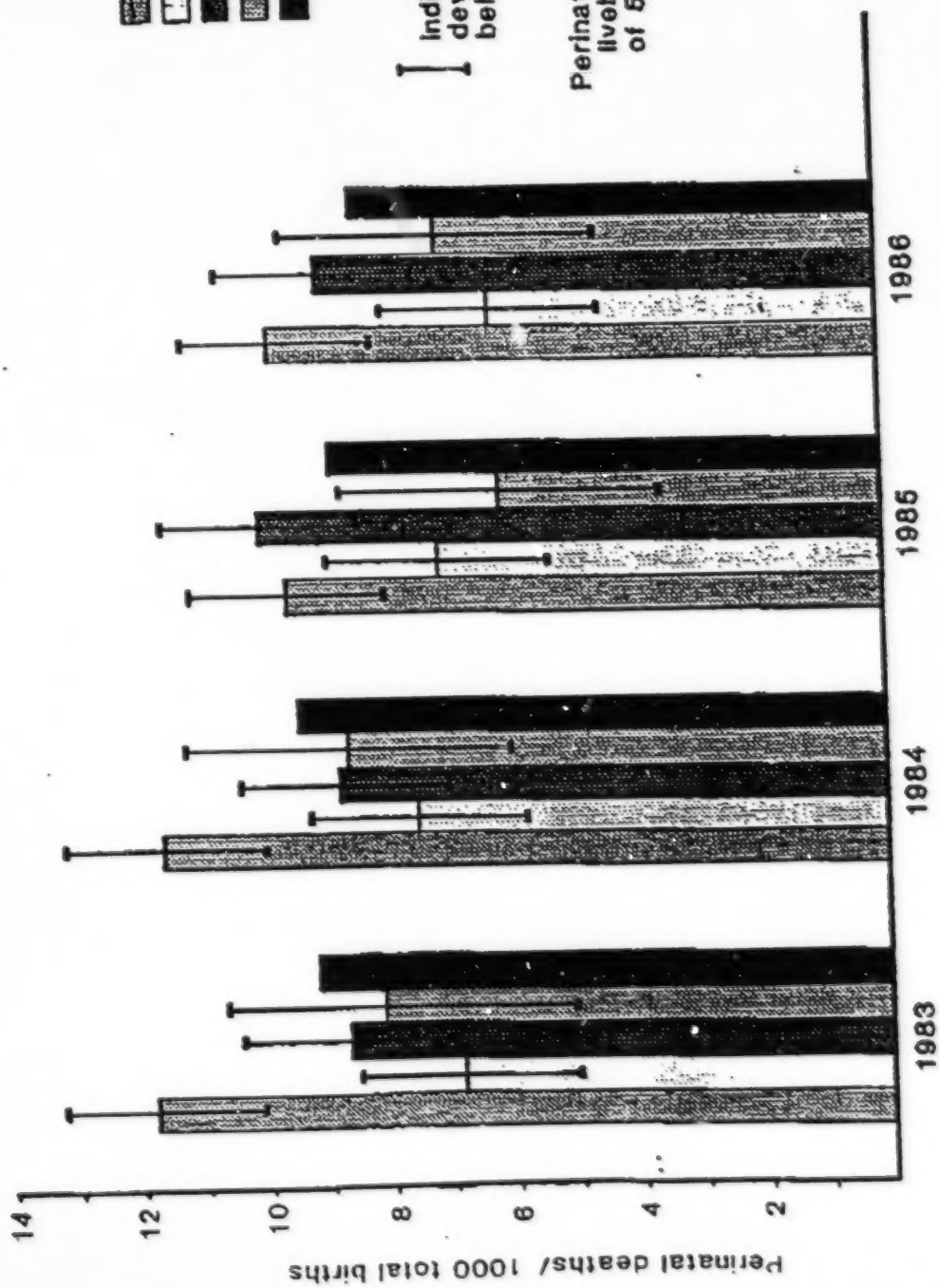
Perinatal Deaths in Alberta by Region 1983-1986
Edmonton
Northern Alberta
Calgary
Southern Alberta
Province
Indicates two standard deviations above and below the rate
Perinatal deaths - livebirths and stillbirths of 500g or more
Perinatal deaths/ 1000 total births
14
12
10
8
6
4
2
1983
1984
1985
1986

**TABLE 3**
**DEMOGRAPHIC PROFILE OF HOME BIRTHS IN ALBERTA**
**FOR CALENDAR YEARS 1985 TO 1989 (INCL.)**

| CHARACTERISTIC | CALENDAR YEAR | | | | |
|---|---|---|---|---|---|
| | 1985 | 1986 | 1987 | 1988 | 1989 |
| **1. Age of Mother** | | | | | |
| 10 - 19 years | 12 | 8 | 4 | 6 | 4 |
| 20 - 29 years | 105 | 110 | 62 | 83 | 84 |
| 30 - 39 years | 58 | 76 | 71 | 89 | 111 |
| 40 + years | 2 | 0 | 3 | 1 | 3 |
| TOTAL | 177 | 194 | 140 | 179 | 202 |
| **2. Location of Birth** | | | | | |
| Edmonton | 86 | 91 | 68 | 73 | 87 |
| Calgary | 33 | 32 | 19 | 35 | 37 |
| Other Alberta Communities | 47 | 62 | 45 | 64 | 74 |
| Not Reported | 11 | 9 | 8 | 7 | 4 |
| **3. Number of Live Children Born to Mother (including this birth)** | | | | | |
| 0 | 0 | 1 | 2 | 2 | 2 |
| 1 | 42 | 40 | 28 | 32 | 39 |
| 2 | 74 | 70 | 50 | 70 | 69 |
| 3 | 37 | 45 | 30 | 43 | 56 |
| 4+ | 24 | 38 | 30 | 32 | 36 |
| **4. Kind of Birth** | | | | | |
| Single live birth | 176 | 186 | 138 | 176 | 198 |
| Twin live birth | 0 | 4 | 0 | 0 | 0 |
| Single stillbirth | 1 | 4 | 2 | 3 | 4 |
| **5. Marital Status** | | | | | |
| Married | 136 | 158 | 108 | 150 | 159 |
| Single | 39 | 29 | 22 | 23 | 34 |
| Divorced | 2 | 7 | 9 | 6 | 8 |
| Widowed | 0 | 0 | 0 | 0 | 1 |
| Not Reported | 0 | 0 | 1 | 0 | 0 |

Source: Alberta Vital Statistics
Alberta Health, July 1990

**TABLE 4**
**DISTRIBUTION OF DEMOGRAPHIC TRAITS FOR HOME BIRTHS IN ALBERTA FOR CALENDAR YEARS 1985 TO 1988 (INCL.)**

| CHARACTERISTIC | PROPORTION OF TOTAL FOR EACH CHARACTERISTIC GROUP BY CALENDAR YEAR | | | | |
|---|---|---|---|---|---|
| | 1985 | 1986 | 1987 | 1988 | 1989 |
| **1. Age of Mother** | | | | | |
| 10 - 19 years | 7% | 4% | 3% | 3% | 2% |
| 20 - 29 years | 59% | 57% | 44% | 46% | 42% |
| 30 - 39 years | 33% | 39% | 51% | 50% | 55% |
| 40+ years | 1% | 0% | 2% | 1% | 1% |
| **2. Location of Birth** | | | | | |
| Edmonton | 49% | 47% | 49% | 41% | 44% |
| Calgary | 19% | 17% | 14% | 20% | 18% |
| Other Alta. Community | 26% | 32% | 32% | 35% | 36% |
| Not Reported | 6% | 5% | 6% | 4% | 2% |
| **3. Number of Live Children Born to Mother (including this birth)** | | | | | |
| 0 | 0 | 1% | 1% | 1% | 1% |
| 1 | 24% | 21% | 20% | 18% | 19% |
| 2 | 42% | 36% | 36% | 39% | 34% |
| 3 | 21% | 23% | 21% | 24% | 28% |
| 4+ | 13% | 20% | 21% | 18% | 18% |
| **4. Kind of Birth** | | | | | |
| Single live birth | 99.4% | 96% | 98% | 98% | 98% |
| Twin live birth | 0 | 2% | 0 | 0 | 0 |
| Single stillbirth | .6% | 2% | 2% | 2% | 2% |
| **5. Marital Status** | | | | | |
| Married | 77% | 81% | 77% | 84% | 79% |
| Single | 22% | 15% | 16% | 13% | 17% |
| Other | 1% | 4% | 1% | 3% | 4% |
| Not Reported | 0 | 0 | 1% | 0 | 0 |

Source: Table 3

In summary these data indicate that home births are more prevalent than province-wide trends would suggest, among mothers 30-39 years of age, residing in Edmonton and who have had a previous live birth.

A recent study conducted by Calgary Health Services (Appendix B) compared planned home births to unplanned home births and to hospital births over the period 1984 to 1987. The study groups were compared according to demographic characteristics, indicators of prenatal care and birth outcomes. Mothers having planned home births were more likely to be primiparas, attend prenatal classes, obtain regular prenatal care from a physician and to have babies with higher birth weight than either the unplanned home birth group or the hospital birth group. Mothers choosing planned home births indicated the following as the top three reasons contributing to their decision:

- o dissatisfied with previous hospital experience;
- o did not want interference, intervention, invasive procedures; and
- o viewed birth as a normal process.

3.4 Provision of Obstetrical Care by Physicians and Registered Nurses

A 1989 survey [1] of employers of health personnel reported the employment of 651 Registered Nurses in maternal/child care and 328 Registered Nurses in labour delivery/recovery suites. Vacancy rates were 10.2% and 3.9% respectively, for these two employment sites. Based on this survey, 5% of employed Registered Nurses provided hospital-based obstetrical care.

The Foothills Hospital Pilot Project, outlined in Section 3.5(b), reports that senior nurses in labour and delivery units, many of whom are trained as midwives, have expressed a desire to provide mothers experiencing low risk pregancies with the type of reproductive care that the mothers and their families are requesting. However these registered nurses are prevented from doing so due to their role as obstetric nurses in a tertiary care centre. This inability to apply their knowledge, skills and experience to their full potential contributes to a sense of frustration and decreased job satisfaction for nursing personnel.

According to fee-for-service data compiled by the Alberta Health Care Insurance Plan, 121 obstetricians and gynaecologists and 2,149 general/family physicians practised in Alberta in 1987/88.

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[1] Alberta Health and Social Services Disciplines Committee, Health and Social Services Personnel Working In Alberta, 1989, page 25.

The Alberta Perinatal Program Advisory Committee reported[2] that obstetric care is a team approach and that "the physician does not have the time to spend six to twelve hours with each patient while she is in labour." In addition the Committee noted that Canadian Medical Protective Association (CMPA) insurance costs for physicians doing obstetrics are sky-rocketing. As a result the number of family physicians doing obstetrics is decreasing.

A 1984 survey of Alberta family practitioners by the Maternal Health Committee of the Alberta Chapter of the College of Family Physicians indicated that 37% of respondents do not practice obstetrics and that another 10% said they planned to reduce or stop obstetrical service in the next two years.

To determine if these trends in physician practice were reflected in the number of normal deliveries covered under the Alberta Health Care Insurance Plan, data in Table 5 was compiled. Comparing fourth quarter services over a seven year period, there does seem to be a small decrease, in the order of 3 - 4%, in the number of normal deliveries provided by general/family practitioners and a corresponding increase in the number of normal deliveries provided by obstetricians.

### 3.5 Midwifery Pilot Project In Alberta

#### a. Misercordia Hospital Pilot Project

In 1986 a pilot project, supported by the Alberta Catholic Hospital Foundation, was completed at the Misercordia Hospital. The purpose of the project was to assess the feasibility of employing hospital-based nurse-midwives. The fifteen-month study compared outcomes between a group of 100 low-risk pregnant women attended by nurse-midwives under the supervision of physicians, to those of a control group of 54 low-risk pregnant women, who preferred the services of obstetricians only. Of the eight nurses providing midwifery services, six were registered nurses trained as midwives in Britain and two were registered nurses specializing in obstetrics.

The clinical findings from the evaluation suggested that women in the midwifery group had:

- shorter lengths of postpartum stay in the hospital
- less sedation during labour
- fewer forcep deliveries
- fewer episiotomies, but more perineal tears

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[2] Alberta Perinatal Program Advisory Committee, Policy Guidelines on Midwifery, 1988.

**TABLE 5**
**NUMBER OF NORMAL DELIVERIES COVERED UNDER AHCIP FOR THE PERIOD JAN. 1 TO MAR. 31 IN YEARS 1984 TO 1990 (INCL.)**

| Period Jan. 1 to Mar. 31 [2] | Normal Deliveries [1] Provided by General/Family Practitioners | | Obstetricians | | Total |
|---|---|---|---|---|---|
| 1990 | 4,506 | (61%) | 2,911 | (39%) | 7,417 |
| 1989 | 4,888 | (60%) | 3,188 | (40%) | 8,076 |
| 1988 | 4,869 | (62%) | 2,977 | (38%) | 7,846 |
| 1987 | 5,032 | (65%) | 2,708 | (35%) | 7,740 |
| 1986 | 6,052 | (68%) | 2,901 | (32%) | 8,953 |
| 1985 | 4,183 | (65%) | 2,299 | (35%) | 6,482 |
| 1984 | 5,105 | (65%) | 2,769 | (35%) | 7,874 |

Source: Alberta Health Care Insurance Plan
Alberta Health

NOTES:

1. Number of in-province services billed under Section G9 of the AHCIP fee-for-service schedule of benefits for physicians.

2. Based on fourth quarter of the fiscal year.

There were no significant differences between the two groups with respect to caesarean sections, length of labour or complications.

A follow-up questionnaire indicated that the study group considered the following two factors as most important:

1) a midwife, familiar to the mother, stayed throughout labour; and

2) an obstetrician was available to oversee the pregnancy, labour and delivery.

b. Foothills Hospital Pilot Project (1990)

The Minister of Health recently supported the recommendation of the Job Enhancement Advisory Committee to fund a pilot low-risk nurse-midwifery program at the Foothills Hospital.

The pilot is a two year project involving a small group of experienced labour and delivery nurses providing total care for approximately 250 low-risk childbearing women a year, in a tertiary care hospital. The project will be implemented in three phases. During the first phase the medical function of delivery and episiotomy will be transferred to the group of nurses. During the second and third phases the nursing role will be expanded to include antepartum and postpartum care for women and their babies.

The project will be evaluated for quality of care provided, cost-effectiveness, family and staff satisfaction and impact on other health care givers within the organization.

3.6 Medical Intervention

According to Statistic Canada [3], during the 1970s and 1980s more Canadian women are postponing the arrival of first and second children to later stages of life. This may explain in part, the increased awareness and expectations of Alberta women of care alternatives available during childbearing.

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[3] S. Wadhera, "Trends in Birth and Fertility Rates, Canada, 1921 - 1987", Health Report, published by Statistics Canada, 1989, Vol 1, No. 2, pp. 223

More and more parents desire births with fewer medical interventions, such as cesarean sections, epidurals, drug induction/enhancement of labour and episiotomies. [4]

Cesarean section rates have increased both in Canada and the United States. In Canada the rate increased from 5.7 per 100 deliveries in 1970 to 15.9 in 1980, while in the United States the rate quadrupled from 5.5 per 100 deliveries in 1970 to 22.7 in 1985. In Alberta, the cesarean rate per 100 deliveries increased from 9.8 in 1976 to 15.3 in fiscal year 1983/1984. [5]

There is growing consensus that a reduction in the cesarean rate can be achieved without reversing the improved mortality trends for the neonate. The principle reasons for wanting to decrease cesarean section rates are to reduce risks assocated with surgical procedures and to lower the economic costs associated with cesarean sections.

During the period 1979 to 1989, the cesarean section rate in Alberta increased from 13.3 to 16.6 per 100 deliveries. [6] This increase is primarily due to an increase in the number of deliveries with a previous cesarean section. Other indications for cesareans include fetal distress, dystocia and breech presentations. In 1986/87, the cesarean section rate of 16.6 per 100 deliveries is due to the contributions of the following indications:

| | |
|---|---|
| o previous cesarean | 6.8 |
| o breech presentation | 2.1 |
| o dystocia | 4.8 |
| o fetal distress | 1.4 |
| o other | 1.5 |
| Total | 16.6 |

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[4] P. A. Field, "Patient's reaction to maternity care", Midwifery, (1985) Vol. 1, pp. 37 - 46.

[5] Health Economics and Statistics, Alberta Health, Rates of Selected Surgical Procedures in Alberta and Canada, 1976 - 1985/86, Selected Years, Nov. 30, 1988.

[6] Alberta Health and Department of Health Services Administration and Community Medicine, University of Alberta, "Cesarean Sections in Alberta, 1979-1987", 1990 (unpublished).

Table 6 indicates the range in cesarean section rates across Alberta regions over the period 1976 to 1985/86. In the United States, employment of midwives has reportedly decreased the incidence of medical interventions during deliveries. The types of interventions assessed included induction of labour, forceps delivery, electronic fetal monitoring, cesarean sections, episiotomies, and the use of intravenous infusions.[7]

## 4. ISSUES

### 4.1 Public Demand and Protecting Public Interest

Advocates for midwifery practice maintain that the continuity of care provided by a known and trusted midwife is the primary strength of the practice of midwifery. Under the present system in Alberta, families may come into contact with a number of different care providers before and after birth, resulting in communication difficulties and a lack of trust because no one care provider sees the mother and family through the entire perinatal period.

This position on continuity of care is supported by the Calgary Association of Parents and Professionals for Safe Alternatives in Childbirth, which states that: "The doctor's time is seen as valuable and a childbearing couple often does not have the opportunity to develop a trusting relationship." The Association further states that "Physician's training has an emphasis on intervention, especially in dealing with the unusual. Normal, uncomplicated births must be recognized as the norm ... Midwifery offers continuity of care by providing services through the childbearing cycle. The services incorporate prenatal classes, care during pregnancy, labour and delivery, and post natal care."

Currently, a pregnant woman in Alberta is usually cared for during pregnancy and birth by a physician. In the past, this physician was likely to be a general practitioner or certified in family medicine. Today, the doctor is more likely to be a specialist in obstetrics and gynaecology. Nurses also play a role during different stages of the reproductive cycle. As indicated by the Task Force on the Implementation of Midwifery in Ontario:

> "Nurses employed in physicians' offices assist in the provision of pregnancy and postpartum care. Public health nurses teach childbirth education classes, assist women with high risk pregnancies to obtain

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[7] Sheila Harvey, "Low-Risk Nurse-Midwifery Program Proposal", Foothills Hospital, 1990.

**TABLE 6**

**CESAREAN SECTIONS PER 100 LIVE BIRTHS, BY REGION IN ALBERTA 1976, 1981-82 AND 1985-86**

| REGION | 1976 RATE | 1976 RANK | 1981-82 RATE | 1981-82 RANK | 1985-86 RATE | 1985-86 RANK |
|---|---|---|---|---|---|---|
| 1. Calgary G.H.D. | 10.7 | 5 | 13.9 | 6 | 15.3 | 11 |
| 2. Edmonton G.H.D. | 9.2 | 7 | 12.7 | 9 | 16.2 | 8 |
| 3. High Level - Fort Vermilion Area | 6.2 | 12 | 6.9 | 13 | 11.3 | 13 |
| 4. Peace River Area | 8.3 | 10 | 11.4 | 11 | 16.3 | 7 |
| 5. Fort McMurray Area | 5.5 | 13 | 23.8 | 1 | 22.4 | 1 |
| 6. Northeast Alberta Area | 6.3 | 11 | 10.8 | 12 | 12.9 | 12 |
| 7. Edmonton Area | 8.4 | 9 | 13.3 | 7 | 15.8 | 10 |
| 8. Edson - Hinton Area | 11.6 | 3 | 13.1 | 8 | 17.0 | 6 |
| 9. Lloydminster - Camrose Area | 8.9 | 8 | 16.0 | 4 | 18.9 | 4 |
| 10. Red Deer Area | 12.4 | 2 | 17.9 | 2 | 20.6 | 2 |
| 11. Calgary Area | 10.3 | 6 | 12.1 | 10 | 17.5 | 5 |
| 12. Lethbridge Area | 12.5 | 1 | 16.3 | 3 | 19.2 | 3 |
| 13. Medicine Hat Area | 11.1 | 4 | 14.5 | 5 | 16.0 | 9 |
| **ALBERTA** | **9.8** | | **13.8** | | **16.5** | |

Source: Health Economics and Statistics, Alberta Health, Rates of Selected Surgical Procedures in Alberta and Canada, 1976 - 1985/86, Selected Years, Nov. 30, 1988.

medical care, and make postpartum home visits. Nurses employed in hospitals care for women during labour, birth, and the postpartum period."

The lack of public satisfaction with current hospital-based maternal/child care services in Alberta is demonstrated by the fact that about 200 women annually deliver their babies at home and pay the expenses for the birth attendant out of pocket. Since assisting in home births is not sanctioned by the provincial licensing bodies for registered nurses or for physicians, these mothers are attended by practitioners who are not required to meet any competency or practice standards. There are no standards in place to protect the mother, selecting home birth from incompetent or unethical practitioners.

4.2 Overlap of Scope of Practice and Autonomy

Midwifery practice defined in Section 2.3 overlaps with scopes of practice defined under the Nursing Profession Act and the Medical Profession Act. Licensing bodies under both statutes support the regulation of nurse-midwives only and the practice of midwifery only in hospitals or in birthing centres affiliated with hospitals. The practice of domiciliary midwifery or home births is not supported by the Alberta Association of Registered Nurses or by the College of Physicians and Surgeons.

In Alberta, a segment of the public is selecting home births as an alterative type of care and there are no provincial standards in place to regulate the practice of domiciliary midwifery. The Health Disciplines Board advised the government in 1982 that domiciliary midwives should not be regulated separately from other midwifery disciplines. For these two reasons, regulating the discipline of midwifery under another professional statute, such as the Nursing Profession Act or the Medical Profession Act, would not provide the required public protection for home births and would create a split in the discipline of midwifery.

Although designating midwives under the Health Disciplines Act would prevent the introduction of separate regulations for different types of midwifery practice, issues concerning the integration of midwifery basic and advanced education into existing education programs must be addressed.

Based on Alberta's experience with nursing disciplines, such as Registered Nursing Assistants, Registered Psychiatric Nurses and Registered Nurses, the granting of professional autonomy can create friction between disciplines, leading to an inefficient employment of human resources and a lack of career development opportunities for transferring experience and skills from one discipline to another. For this reason articulation opportunities should be available for midwives.

## 4.3 Effectiveness of Service Delivery

As the practice of midwifery, defined in Section 2.3, has been illegal in Canada, the effectiveness of midwifery practice on service delivery is difficult to assess. A limited number of hospital-based pilot projects involving registered nurses [7] have suggested:

- that clients are more satisfied with the continuity of care before, during and after birth;
- that the incidence of medical inteventions decreased; and
- that the average length of hospitalization decreased.

Table 7 indicates that the average length of hospitalization in Alberta was about four days for a normal delivery and about 5 days for a delivery with complications. These data were comparable to the Canadian experience, however in-patient stays for normal deliveries in the United States are less than the Canadian average.

The effectiveness of home births assisted by midwives has not been evaluated in Canada.

Recognizing that the United States health system is significantly different from the Canadian system, results from the Amercian experience with midwifery programs must be viewed with caution. The U.S. experience [7] suggests:

- parents have been satisfied with the care received and as a result the demand for midwifery care has grown as the public becomes aware of midwifery programs;
- that no differences from standard physician care have been documented for mortality or morbidity;
- that the incidence of intervention techniques, such as episiotomies, induction of labour, forceps delivery, electronic monitoring, cesearean sections and the use of intravenous infusions has generally decreased; and
- that fewer perinatal admissions, decreased prematurity rates and shorter lengths of hospital stay with patients under the care of midwives have decreased the costs associated with hospitalization.

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[7] Sheila Harvey, "Low-Risk Nurse-Midwifery Program Proposal", Foothills Hospital, 1990.

**TABLE 7**

**HOSPITAL SEPARATIONS AND AVERAGE IN-PATIENT DAYS PER SEPARATION FOR PREGNANCIES IN ALBERTA, 1981/82 TO 1985/86**

| DIAGNOSIS | FISCAL YEAR 1981/82 | 1982/83 | 1983/84 | 1984/85 | 1985/86 |
|---|---|---|---|---|---|
| 1. Normal Delivery | | | | | |
| o number | 12,435 | 12,176 | 11,638 | 10,331 | 9,672 |
| o avg. inpatient days, Alberta | 4.4 | 4.3 | 4.2 | 4.2 | 4.1 |
| o avg. inpatient days, Canada | 4.6 | 4.4 | 4.4 | 4.3 | 4.2 |
| 2. Haemorrhage of Pregnancy | | | | | |
| o number | 2,369 | 2,538 | 2,585 | 2,429 | 2,556 |
| o avg. inpatient days, Alberta | 4.6 | 4.4 | 4.4 | 4.4 | 4.2 |
| o avg. inpatient days, Canada | 4.9 | 4.8 | 4.7 | 4.8 | 4.6 |
| 3. Other Complications related to pregnancy | | | | | |
| o number | 10,961 | 11,904 | 12,082 | 11,984 | 12,495 |
| o avg. inpatient days, Alberta | 4.2 | 4.1 | 4.2 | 4.2 | 4.1 |
| o avg. inpatient days, Canada | 4.5 | 4.4 | 4.5 | 4.4 | 4.4 |
| 4. Care in Pregnancy, Labour and Delivery | | | | | |
| o number | 15,365 | 16,969 | 17,354 | 16,831 | 16,638 |
| o avg. inpatient days, Alberta | 5.5 | 5.5 | 5.4 | 5.3 | 5.1 |
| o avg. inpatient days, Canada | 6.3 | 6.1 | 5.9 | 5.9 | 5.7 |
| 5. Complications Occurring in Labour and Delivery | | | | | |
| o number | 13,144 | 13,753 | 13,704 | 13,861 | 14,725 |
| o avg. inpatient days, Alberta | 4.8 | 4.6 | 4.6 | 4.5 | 4.4 |
| o avg. inpatient days, Canada | 5.1 | 5.0 | 4.8 | 4.7 | 4.6 |
| Total Separations | 54,274 | 57,340 | 57,363 | 55,436 | 56,086 |

Source: Statistics Canada, Hospital Morbidity, Catalogue No. 82-206, 1981/82 to 1985/86.

If midwives are to be regulated in Alberta, options related to the following service delivery issues will need to be addressed:

- o appropriate and cost-effective reimbursement mechanisms,
- o availability of liability insurance,
- o impact on medical and nursing human resource requirements,
- o integration of midwifery education and practice with other disciplines on the health care team, and
- o availability of appropriate referral mechanisms.

## 5. RECOMMENDATIONS

After considering the service implications of midwifery practice, Alberta Health recommends:

- o That midwifery practice be regulated under the Health Disciplines Act to establish standards, procedures and controls to:
  - protect the public from incompetent or unethical midwives;
  - promote effective delivery of pre and post-natal care and obstetrical services;
  - enable the public to exercise informed judgement and freedom of choice with respect to reproductive care;
- o That practice standards be established for the types of midwifery practice (i.e., midwifery services provided in hospitals, homes, birthing centres and public health/ home care programs) which the Health Disciplines Board recommends as appropriate;
- o That midwives provide the full range of obstetrical services, including pre-natal care, maternal/family education and delivery, for normal or low risk pregnancies only. Clear protocols will need to be developed to identify normal or low risk pregnancies;
- o That both nurse-midwives and direct-entry midwives be regulated under the same statute; and
- o That midwives have the basic nursing knowledge and skills required to provide appropriate patient care and service requirements in hospitals, homes, birthing centres and public health/home care programs. Educational articulation opportunities should be available for midwives seeking career development opportunities in related medical or nursing disciplines.

# APPENDIX A

## ANTEPARTUM SCORING SYSTEM FOR IDENTIFYING LOW RISK PREGNANCIES

Appendix A

## Foothills Hospital

| TOTAL SCORE | | |
|---|---|---|
| A = _____ | Low Risk | 0 – 2 |
| B = _____ | High Risk | 3 – 6 |
| C = _____ | Extreme Risk | ≥ 7 |

### PART I PRE–PREGNANCY DATA

| SCORE | | |
|---|---|---|
| 1 | Age ≤ 17 At Delivery | |
| 2 | Age ≥ 35 At Delivery | |
| 1 | Obesity (≥ 91 kg) | |
| 1 | Height (≤ 152 cm) | |
| 1 | Smoker – Anytime during pregnancy | |
| 1 | DIABETES | Controlled By Diet Only |
| 3 | | Insulin Used |
| 3 | | Retinopathy Documented |
| 1 | HEART DISEASE | Asymptomatic (No effect on daily living) |
| 3 | | Symptomatic (Affects daily living) |
| 2 | HYPERTENSION | 140/90 or Greater |
| 3 | | Hypertensive Drugs |
| 2 | Chronic Renal Disease Documented | |
| 1 | Other Medical Disorders (eg. epilepsy, severe asthma, lupus, Crohn's disease) | |
| | | |

### PART II PAST OBSTETRICAL HISTORY

| SCORE | NOTE: Patient receives score only ONCE regardless of the number of times the risk factor has occurred. | |
|---|---|---|
| 3 | Neonatal Death | |
| 3 | Stillbirth | |
| 1 | Abortion Between 12 to < 20 Completed Weeks and < 500 grams Birth Weight | |
| 1 | Delivery at 20 to < 37 Weeks | |
| 2 | Caesarean Section | |
| 1 | Small for Dates (Refer to Table I) | |
| 1 | Large for Dates ( Refer to Table I) | |
| 1 | Rh Isoimmune | Unaffected Infant |
| 3 | | Affected Infant (Direct Coombs Positive at Birth) |
| 1 | Major Congenital Anomaly (eg. Downs, heart defects, diaphragmatic hernia, CNS defects, etc.) | |
| | | |

### PART III PROBLEMS IN CURRENT PREGNANCY

| SCORE | | STAGES A 1st VISIT | B 36 Weeks | C LAB ASSE |
|---|---|---|---|---|
| 2 | Diagnosis of Large for Dates | | | |
| 3 | Diagnosis of Small for Dates | | | |
| 2 | Polyhydramnios or Oligohydramnios | | | |
| 3 | Multiple Pregnancy | | | |
| 3 | Malpresentations | | | |
| 2 | Membranes Ruptured Before 37 Weeks | | | |
| 1 | Bleeding < 20 Completed Weeks | | | |
| 3 | Bleeding ≥ 20 Completed Weeks | | | |
| 2 | Pregnancy Induced Hypertension | | | |
| 1 | Proteinuria ≥ 1+ | | | |
| 1 | Gestational Diabetes Documented | | | |
| 3 | Blood Antibodies (Rh, Anti C, Anti K, etc.) | | | |
| 1 | Anaemia (< 100 g per L) | | | |
| 1 | Pregnancy ≥ 42 Weeks | | | |
| 1 | Poor Weight Gain (26 – 36 weeks < 1/2 kg/week) or weight loss) | | | |
| NO SCORE | OTHER: | | | |

**APPENDIX B**

**PLANNED AND UNPLANNED HOME BIRTHS AND HOSPITAL BIRTHS IN CALGARY, ALBERTA, 1984 - 1987**

# Planned and Unplanned Home Births and Hospital Births in Calgary, Alberta, 1984–87

THOMAS J. ABERNATHY, PhD
DONNA M. LENTJES, BN

Dr. Abernathy is Administrator for Research and Informa-

*Mothers who had planned their home birth were more likely to be primiparous, attend prenatal classes, obtain regular prenatal care from a physician, and have babies with a higher birth weight than either the unplanned or hospital group. Of particular concern, however, were the subset of unplanned home births who were primiparous. These mothers attended prenatal classes less frequently than any other group, received the lowest*

Table 1. Comparison of planned and unplanned home births and hospital births, Calgary (Canada) 1984–87

| Category | Planned home births (N = 61) | Unplanned home births (N = 29) | Hospital births (N = 33,777) |
|---|---|---|---|
| Mean age | 28.7 | 28.9 | 27.4 |
| Parity: percent primiparas | 28.0 | 18.0 | 45.6 |
| Marital status: percent not married | 15.0 | 21.7 | 8.3 |
| Prenatal classes: | | | |
| Percent primiparas attending | 86.7 | 40.0 | 70.7 |
| Percent multiparas attending | 68.2 | 25.0 | 15.5 |
| Mean number of physician visits: | | | |
| Primiparas | 11.2 | 3.4 | N/A |
| Multiparas | 8.6 | 10.1 | N/A |
| Birth outcomes: | | | |
| Percent respiration 5 minutes | 95.0 | 93.0 | N/A |
| Percent in labor 24 hours | 84.0 | 86.0 | N/A |
| Mean gestational age | 40 | 39 | 39 |
| Mean birth weight (g) | 3,534 | 3,287 | 3,319 |

than 11,000 births in Calgary, which are registered with the Provincial Vital Statistics. As part of city-wide health monitoring, the agency began in 1983 to record the information from these notices. Because of public interest, it was decided to collect supplemental information specific to home births. A form (similar to the Physician's Notification of Birth) was developed for community health nurses to complete at the first home visit that they make with every new mother in the city. Information collected on the form includes the mother's age, marital status, parity, duration of labor and the gestational age, indicators of perinatal care (attendance at prenatal classes, physician visits), whether or not the home birth was planned or accidental, and birth outcome indicators (weight, onset of respiration, birth injury, or presence of congenital malformations).

No other data were collected or used as the basis for this study. Since notification of all registered births is received by Calgary Health Services, and all new mothers were visited by a community health nurse during the study period, we are certain that information was obtained on 100 percent of Calgary births.

## Results

During the period between 1984 and 1987 a total of 90 home births occurred in Calgary. This small number may reflect the fact that in Alberta a physician's preplanned attendance at a home birth is considered unbecoming conduct and could lead to loss of license. A contributing factor may be that the practice of midwifery is not legislated in the Province. The Alberta Association of Registered Nurses has taken the position that they cannot support home births within the current health care system, and instead promote birthing centers.

In examining the data, it is apparent that there are two heterogeneous groups of home deliveries: planned and unplanned ones. Of the 90 home births included in this study, 61 (68 percent) were planned and 29 (32 percent) were unplanned. In comparing these groups to each other, and to hospital births, a number of interesting findings emerged concerning demographic characteristics of mothers, prenatal care, and birth outcome. Table 1 summarizes some of these findings.

**Demographic characteristics of mothers.** The mean age of mothers with either planned or unplanned births is almost identical (28.1 years planned, 28.9 years unplanned) and only slightly older than the average for hospital births (27.4 years). In regards to parity, a higher proportion of mothers in the unplanned group were multiparous (82 percent) than in planned home births (74 percent) or in all hospital births combined (54 percent). Women who experienced home rather than hospital births were more likely to be unmarried; this was particularly so for women with unplanned home births.

**Prenatal care.** Women who had planned home births were more likely to attend prenatal classes than those with unplanned home births or hospital births. This trend was especially pronounced for multiparous women. In addition, while the overall mean number of prenatal visits to the physician was very similar for planned or unplanned births, primiparas with planned births averaged 11.2 visits, while those with unplanned births averaged only 8.4 visits. For parous women, those with planned births averaged 8.6 visits, while those with unplanned births averaged 10.1. No comparative figures are available for hospital births.

**Birth outcome.** In regards to the birth process and the birth outcome, many measures were similar for the planned and unplanned group. Duration of labor was more than 24 hours in 84 percent of the planned group and 86 percent of the unplanned group. Little difference was observed in regard to onset of infant respiration. In the planned group

Table 2. Reason for 57 respondents choosing home births, Calgary (Canada) 1984–87

| Reason | Number[1] | Percent[2] |
|---|---|---|
| Dissatisfied with previous hospital experience | 11 | 19.3 |
| Did not want interference, intervention, invasive procedure | 11 | 19.3 |
| Birth normal process—home natural or normal environment | 10 | 18.5 |
| More relaxed, comfortable, caring situation | 9 | 15.8 |
| Better for family; positive to have family there or together | 8 | 14.0 |
| Previous experience positive | 8 | 14.0 |
| Greater personal control | 6 | 10.6 |
| Dislike hospitals (too regimented, impersonal, unspecified) | 5 | 8.9 |
| Desired home birth (unspecified) | 4 | 7.0 |
| Safer at home | 3 | 5.3 |
| Lack of trust in doctors, medicine | 2 | 3.5 |
| Unavailability of family doctor | 2 | 3.5 |
| Choice after reading, studying | 2 | 3.5 |
| Other[3] | 2 | 3.5 |

[1] Based on responses given by mothers. Respondents may have cited more than 1 reason.
[2] Represents the percentage of mothers citing each response.
[3] Includes responses cited by fewer than 2 mothers.

more than 95 percent of babies spontaneously commenced respiration in under 5 minutes, while in the unplanned group this figure was 93 percent. Although there were three babies born with congenital heart defects, in neither group were there reported any negative outcomes related to the birth process. Average gestational age was 40 weeks (range 38–42 weeks) for planned home births, 39 weeks (range 32–42 weeks) for unplanned home births and 39 weeks for the hospital group. The one observed difference between groups was in relation to mean birth weight, with babies in the planned home birth group on average heavier (3,534 g) than either in the unplanned home birth group (3,287 g) or the hospital group (3,319 g).

**Choice of home birth.** Women who had planned home births were asked why they made this decision. The responses are enlightening and quite consistent. By far the most frequent responses were related to dissatisfaction with a previous hospital birth experience, dissatisfaction with and dislike of hospitals in general, or an aversion to interference, intervention, and invasive procedures for what was deemed as a natural and normal process (table 2). In addition, many women believed that there were positive benefits to themselves and their families, such as greater safety, being in relaxed, comfortable surroundings, and having more personal control. A previously positive experience with a home birth was also frequently cited as a reason for choosing the same environment again.

Finally, women were asked whether they would choose to have a home birth again. Ninety-seven percent of those who had planned to have a home birth stated yes; only 10 percent of those whose home birth was unplanned would do the same. This is hardly surprising, since only four of these unplanned births were attended by either a midwife or physician. Certainly an unexpected home birth could be perceived as frightening, especially for a mother experiencing her first childbirth with no professional in attendance.

## Discussion

Based on the findings from this relatively small study, it appears that the planned home birth group did not represent mothers who received inadequate prenatal care, or who experienced poorer birth outcomes. Instead, these mothers were more likely to attend prenatal classes and have babies with a heavier birth weight than their counterparts who experienced hospital births, findings that are consistent with those cited by other researchers (*6,8,13,14*). They also made more physician visits than mothers in the unplanned group. It would seem that this group of mothers not only made a conscious, motivated, thoughtful decision but also obtained the prenatal care necessary to help ensure a healthy birth outcome.

Of particular concern are the findings relating to unplanned home births among primiparas. This group attended prenatal classes less frequently than primiparas in any other group and reported a lower number of visits to the physician than primiparous or parous women in other groups. They also tended to be the youngest (25.8 years). These findings may possibly indicate that primiparous women with unplanned births were not receiving as much prenatal care or education and therefore may have had insufficient knowledge to monitor labor. By contrast, the unplanned parous mothers were more likely than their hospital counterparts to attend pre-

Figure 1. Gestational age by parity and birth type and site, Calgary (Canada) 1984–87

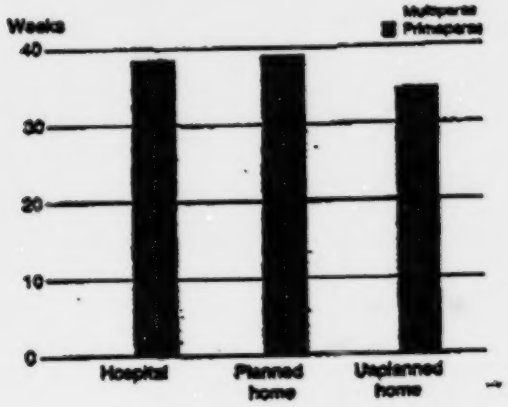
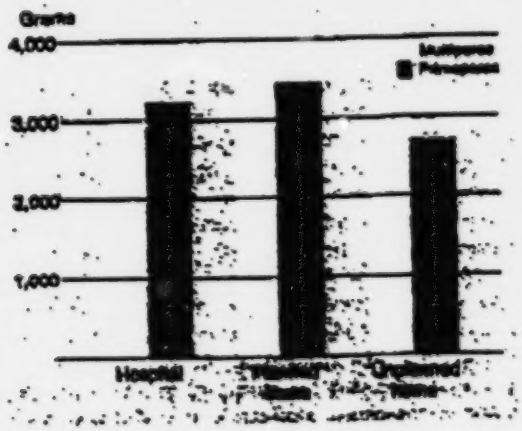



Figure 2. Mean birth weight by parity and birth type and site, Calgary (Canada) 1984–87




natal classes. This may suggest that for this home birth group the babies simply arrived too fast.

Findings from this study also suggest that the unplanned home births may be at higher risk for poor outcome, particularly the primiparous group. They were younger, more likely to be unmarried, and to have obtained less prenatal care. This observation is further substantiated by a comparison of birth outcome (as measured by gestational age and birth weight) by parity and location (figures 1 and 2). It becomes apparent that babies of the unplanned primiparous mothers average both the shortest gestational age and lowest birth weight. By contrast, the averages for the unplanned multiparous group become more similar to hospital births. These findings are again consistent with those found in other studies.

As with other research on the topic, several limitations are inherent in the study. First, no data were available for those mothers who may have planned to have a home birth and instead, due to a variety of circumstances, either voluntarily opted for hospital births or, due to potential risk factors, may have been advised to do so. In addition, no data are available on those mothers who may have been transferred to a hospital because of complication during labor. As has been pointed out by Campbell and coworkers (5), this group of mothers may be at the very highest risk for a poor birth outcome, since precious time is lost during the transfer period.

It is likely, therefore, that planned and successfully completed home births represent a healthier prenatal population in general, since those at risk for a complicated birth or poor outcome are identified before the home birth or transferred during labor. Certainly these factors would account for the lower than average birth weight for hospitals. If in fact, premature infants were excluded from hospital figures, this may cancel the apparent difference between the two groups or even reverse the direction of the findings.

In conclusion, findings from this study support not only the supposition that unplanned and planned home births must be treated as heterogeneous groups in any comparison of risk factors and birth outcome between home and hospital births, but also that, within the unplanned group, parous women differ from primiparous women. In addition, given the other limitations inherent in this and similar studies, the apparent better outcome in the planned group as measured by birth weight must be viewed with caution. However, in order to make hospital birthing a more positive experience for mothers and families, it may be well to note the findings related to why women chose home births.

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# Measuring Health Variables Among Hispanic and Non-Hispanic Children with Chronic Conditions

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Parts of this paper were presented at the annual meeting of the American Public Health Association in Dallas, TX, in November 1983. The study was supported in part by the Department of Health and Human Services, Maternal and Child Health Crippled Children's Service, MC-360402 (Social Security Act, Title V) grant and grant No. 5-P50-MH-38280 from the National Institute of Mental Health, Prevention Research Branch, Public Health Service.

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**Synopsis**

*This paper addresses two concerns related to differences in the health status of Hispanic and non-Hispanic children: methodological issues in the measurement of health status across population subgroups and the substantive differences in the health of these subgroups.*

*Interview data from a study of chronically ill children in a northeastern inner city were collected using carefully translated measures of health and health-related behaviors. The psychometric properties of the scales were assessed across the subgroups to determine if common interpretation of the scales was possible. After determining that this was the case, group means in health and health-related variables were compared.*

*Despite sociodemographic group differences in variables, there were remarkably few differences among the groups on traditional morbidity measures. However, significant differences were found on four of five scaled health-related measures (the impact of the child's illness on the family, the child's functional status, and the mental health of both mother and child). These findings did not all favor the same group, suggesting that certain areas of function may present more problems for some subgroups. These differences virtually all disappear when multivariate techniques are used to control for variation in important socioeconomic characteristics among the three subgroups. Statements that the health status of one subgroup is better than that of another are too simplistic if they do not indicate the particular aspect of health status being discussed and control for differences among the groups in maternal education, family structure, maternal welfare status, and similar background characteristics.*

THE 1980 CENSUS REVEALED that there are 14.6 million Hispanics in the United States representing 6.4 percent of the population (*1*). Since they are the fastest growing minority group in the population,

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